

REMARKS

Claims 1-4, 6, 7, and 10-12 are currently pending. No claim amendments are made.

Claim Rejections -- 35 USC 102(b)

Applicants respectfully traverse the anticipatory rejections of claims 1-4, 6, 7 and 10-12 over US 6,150,441 to Chiba et al. (hereinafter "Chiba").

The present invention is related to an organic polymer having epoxy-containing silicon groups at its ends, which exhibits excellent curability. *See* the specification at paragraph [0019]. The organic polymer having epoxy-containing silicon groups at its ends of the present invention is a novel polymer in which epoxy-containing silicon groups are selectively introduced in the ends, and the organic polymer can be synthesized without deterioration of the polymer main chain, and the like, during production by singly curing the epoxy group. *See* the specification at paragraph [0091]. The method for curing the organic polymer having epoxy-containing silicon groups at its end comprises a curing reaction of the epoxy group with a general curing agent for epoxy-containing compounds. *See* the specification at paragraph [0092].

Independent claim 1 is drawn to an organic polymer having (a) a main skeleton comprising a saturated hydrocarbon polymer or a vinyl polymer, and (b) epoxy-containing silicon groups at its ends. Chiba fails to disclose or suggest all the limitations of claim 1.

Chiba describes a composition for double glazing use which comprises (A) a hydrocarbon polymer of 500 to 300,000 in molecular weight having at least one alkenyl group in one molecule, (B) a curing agent having at least two hydrosilyl groups in one molecule, (C) a hydrosilylation catalyst, and (D) a tackifier, wherein one of the examples of the tackifier can have an alkenyl group and an epoxy group. (col. 2, ll. 25-35; col. 9, line 55 to col. 10, line 5). Chiba, however, differs from the claimed organic polymer at least in not disclose an organic polymer having epoxy-containing silicon groups at its ends, as recited in claim 1.

The Office Action essentially asserts that Chiba discloses all of the elements of the composition recited in claim 1. The Office Action asserts that the Chiba hydrosilyl curing agent will react with the hydrocarbon polymer containing an alkenyl group. The Office Action further

asserts that the alkenyl group of the epoxy containing tackifier can react with the hydrosilyl group of the end unit. The Office Action concludes that, therefore, the hydrosilyl groups not reacted with the hydrocarbon polymer will have the epoxy functionality recited in claim 1. Applicants disagree. The reaction product obtained in Chiba cannot reasonably be considered to correspond to the claimed organic polymer.

In particular, the Chiba reaction product has a structure in which the epoxy group is already combined with the cross-linked hydrocarbon polymer. In contrast, the hydrocarbon polymer of claim 1 has epoxy containing silicon groups at the ends of the polymer in preparation for curing. The structural distinction between the Chiba reaction product and the claimed organic polymer is also evident by a close examination of the Chiba method for forming the reaction product.

For example, Chiba discloses that it provides a composition for double glazing use which has quick hardenability by addition type curing (col. 2, ll. 6-11). Chiba states

According to the present invention, the composition for double glazing use is cured by the addition reaction of Si-H groups to alkenyl groups in the presence of the hydrosilylation catalyst of compound (C), so that the curing rate is markedly high which is convenient for carrying out line production.

(col. 9, ll. 49-54)(emphasis added).

Thus, the Chiba composition is cured by an addition reaction that necessarily cures the composition before the alkenyl groups of the epoxy functional moieties would react with the hydrosilane groups of the end unit. In other words, in Chiba, the silicon groups are cured in the composition before epoxidation. In contrast, the present invention comprises a hydrocarbon polymer, which has an epoxy group containing a silicon group at the end. As described in at least paragraph [0019] of the Applicants' specification, the organic polymer, with the epoxy group, is then able to be cured with a general curing agent for epoxy-containing compounds, as discussed above. In this regard, the problems of epoxidation by peroxide oxidation can be solved, as described in the background of the present specification. Chiba does not disclose that the organic polymer has epoxy-containing silicon groups at its ends, as recited in claim 1, nor

does it contemplate the advantages of resolving problems of epoxidation by peroxide oxidation. As such, Chiba does not disclose nor suggest all of the limitations of claim 1.

For at least the foregoing reasons, the Applicants respectfully submit that independent claim 1, and claims 2, 3, 6, 7 and 10 dependent therefrom, are not anticipated by Chiba. Withdrawal of this ground of rejection is therefore respectfully requested.

Conclusion

At least due to the reasons discussed above, applicants contend that the application is in a condition for allowance. A Notice of Allowance is believed in order.

If the filing of this paper is deemed not timely, applicants petition for an appropriate extension of time. The Commissioner is authorized to charge any fees or credit any overpayments that may be required in relation to the filing of this paper to Deposit Account 11-0600.

Respectfully submitted,

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